AE 550

2-METER FM TRANSCEIVER

INSTRUCTION MANUAL

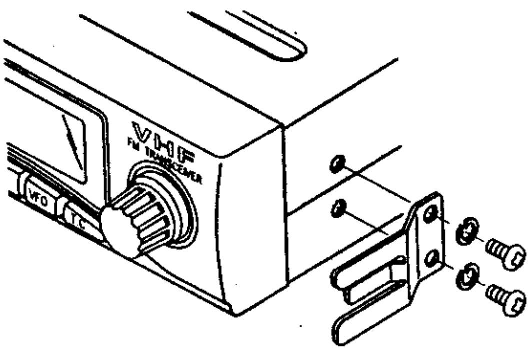
Albrecht®

CONTENTS

ATTACHING THE MICROPHONE HOLDER

You can connect the microphone holder to side of the transceiver or to another location in your vehicle.

To attach the holder to side of the transceiver, horizontally secure the holder to the side using the supplied screws and lock washers.



To attach the holder to another location in the vehicle, such as the dashboard, follow these steps.

(1) Using the holder as a template, mark the positions for the mounting screw holes at the desired location.
(2) At each marked position, drill a hole slightly smaller than the supplied mounting screws.
Caution: Be careful not to drill into anything behind the mounting surface.
(3) Attach the holder at the mounting location using the supplied tapping screws and lock washers.

MOUNTING THE TRANSCEIVER

The most common mounting location for this transceiver is under a vehicle's dashboard.

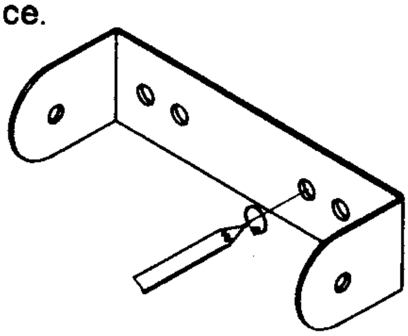
If you are mounting the transceiver in a vehicle, choose a location where:

- You can easily reach the unit.
- Wires and cables are clear of the vehicle's pedals or other moving parts.
- The unit is not directly in front of heating vents.
- All wires and cables can reach their connection points.

Caution: If you use the transceiver in a vehicle, mount it securely to avoid damage to the transceiver or vehicle or injury to anyone in the vehicle during sudden starts or stops.

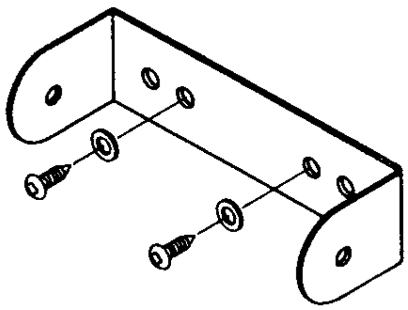
Follow these steps to mount the transceiver using the supplied hardware.

(1) Using the mounting bracket as a template, mark the positions for the screw holes on the mounting surface.

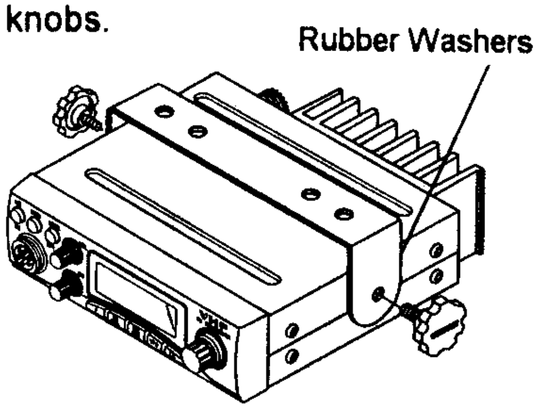


(2) In each marked location, drill a hole slightly smaller than the supplied mounting screws.
Caution: Be careful not to drill into objects behind the mounting surface.

(3) Using a Philips screwdriver, attach the mounting bracket to the mounting surface with the supplied mounting screws and flat washers.



(4) Attach the transceiver to the mounting bracket using the supplied rubber washers and mounting knobs.



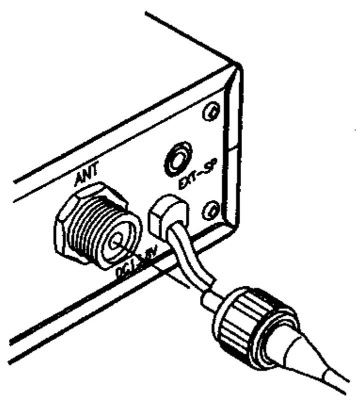
CONNECTING AN ANTENNA

There are many different types of antennas for mobile VHF transceiver. Each antenna type has its own benefits, so choose the one that best meets your needs.

When you choose an antenna, keep in mind that for the best performance. You should mount the antenna:

- As high as possible on the vehicle
- As far as possible from sources of electrical noise
- Vertically

Once you choose an antenna, follow its mounting instuctions. Then route the cable to the transceiver and connect the cable to the ANT jack on the back of the transceiver.



Cautions:

- Avoid routing the cable next to sharp edges or moving parts, which might damage the cable.
- Do not run the cable next to power cables or other radio antenna cables.
- Do not run the cable through the engine compartment or other areas that produce extreme heat.

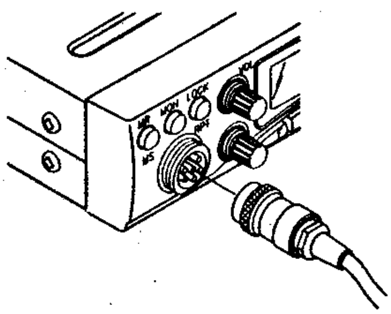
To achieve your radio's maximum range, the antenna's Standing Wave Ratio (SWR) must be adjusted. You can use an SWR meter (not supplied) to adjust the SWR for your antenna.

Follow the instructions supplied with the SWR meter and antenna to adjust your antenna's SWR to the lowest possible value. SWR values of 2.0:1 are generally acceptable, with readings of 1.5:1 or lower being more desirable.

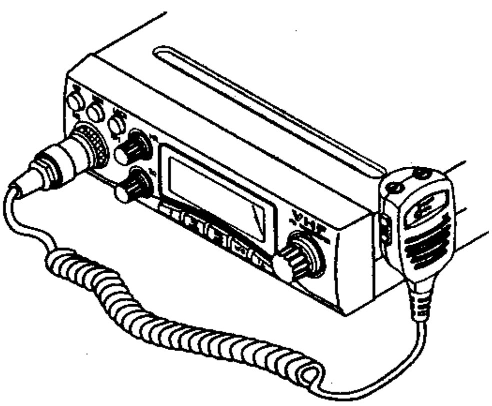
Note: Using your radio with an antenna adjusted to a high SWR value might eventually damage your radio.

CONNECTING THE MICROPHONE

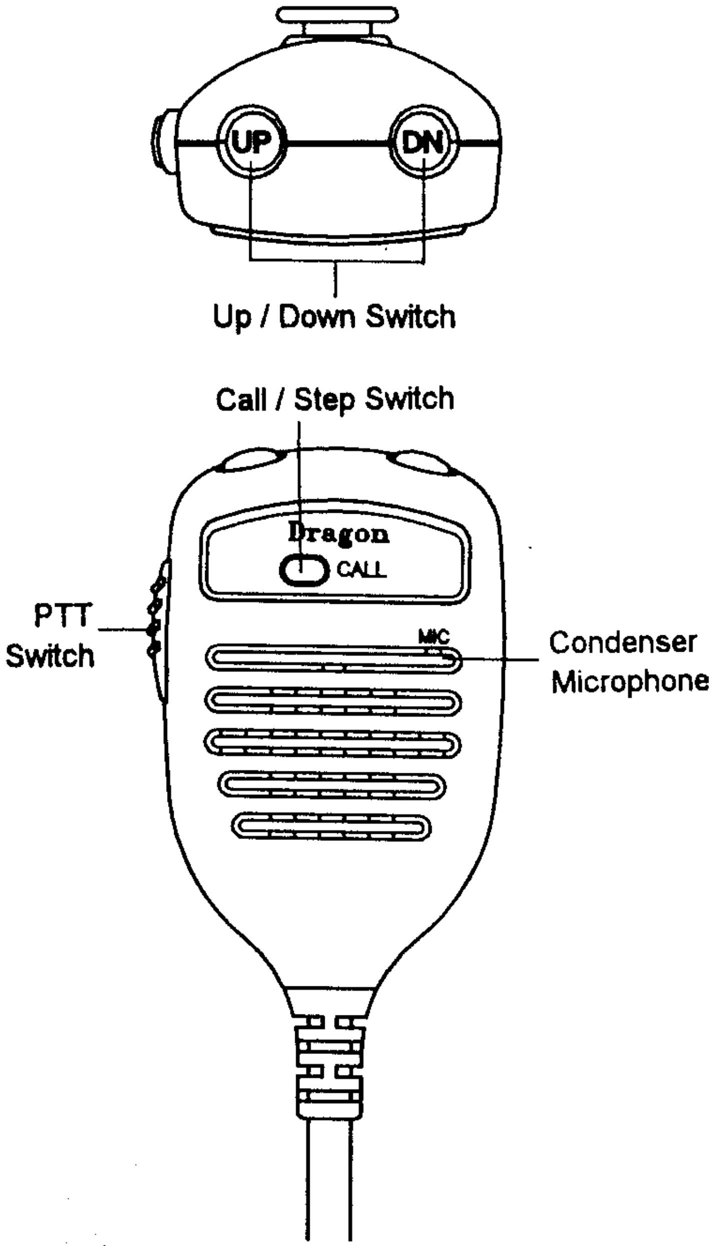
(1) The plug into the microphone jack on the front of the transceiver.



(2) Slide the microphone onto the microphone holder.



(3) Microphone



CONNECTING EXTERNAL SPEAKER

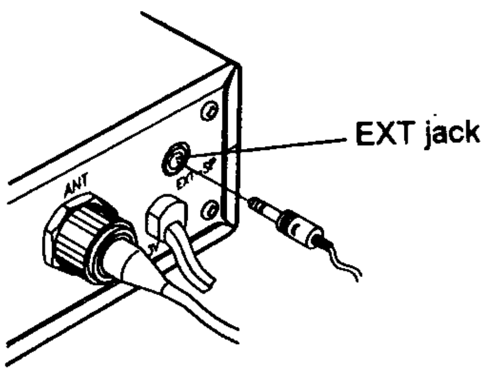
You can connect your transceiver to an external CB speaker.

Note: When you connect an external speaker, the internal speaker disconnects.

Using an External Speaker

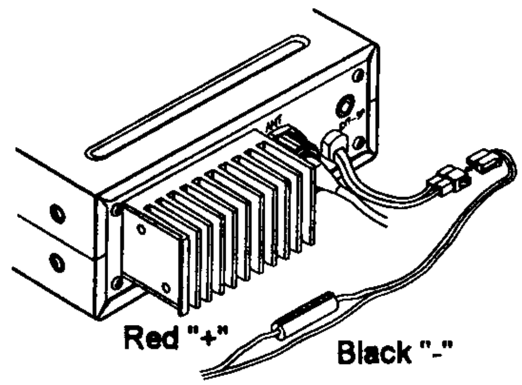
The external speaker you use with the transceiver should have an impedance of 8 ohms and be able to handle 3 to 10 watts of power. The speaker cable must have a 1/8-inch plug.

To connect the external speaker to the transceiver, insert the speaker cable's plug into the EXT jack on the back of the transceiver.



USING VEHICLE BATTERY POWER

Follow these steps to connect the transceiver to vehicle battery power.

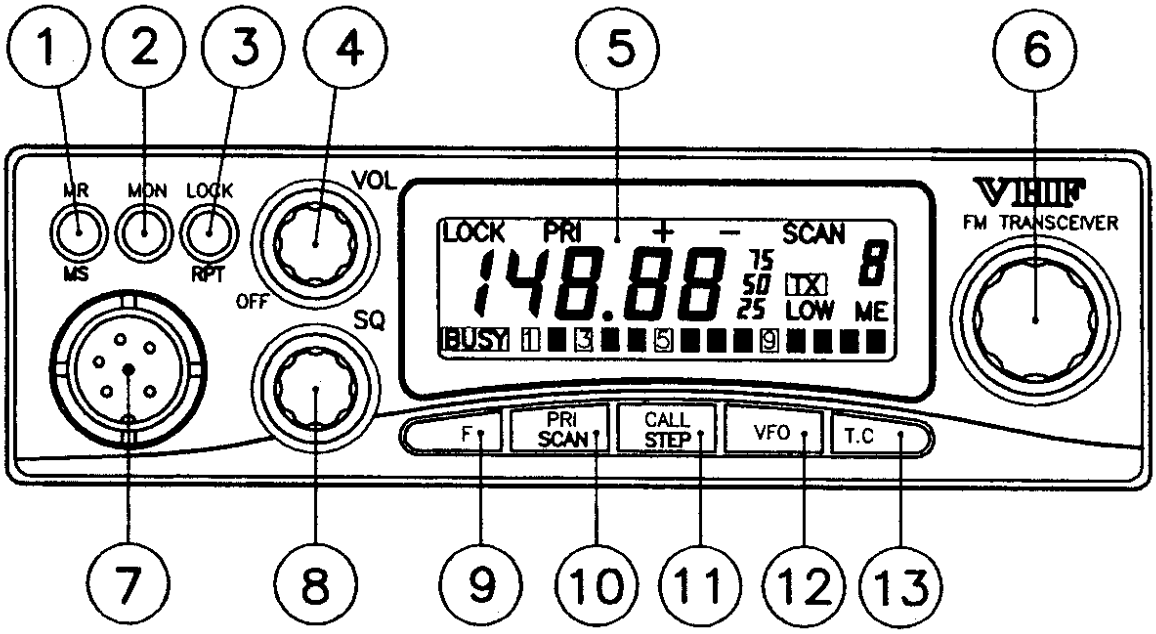


(1) Connect the red wire (with the inl-ine fuse holer) on the back of the transceiver to a point in your vehicle's fuse block that has po-er alway supplied even when the ignition is turned off. If not, the memory channel data and work-ing conditions are erased.

(2) Connect the black wire to a metal part of the vehicle's frame (chas-sis ground).

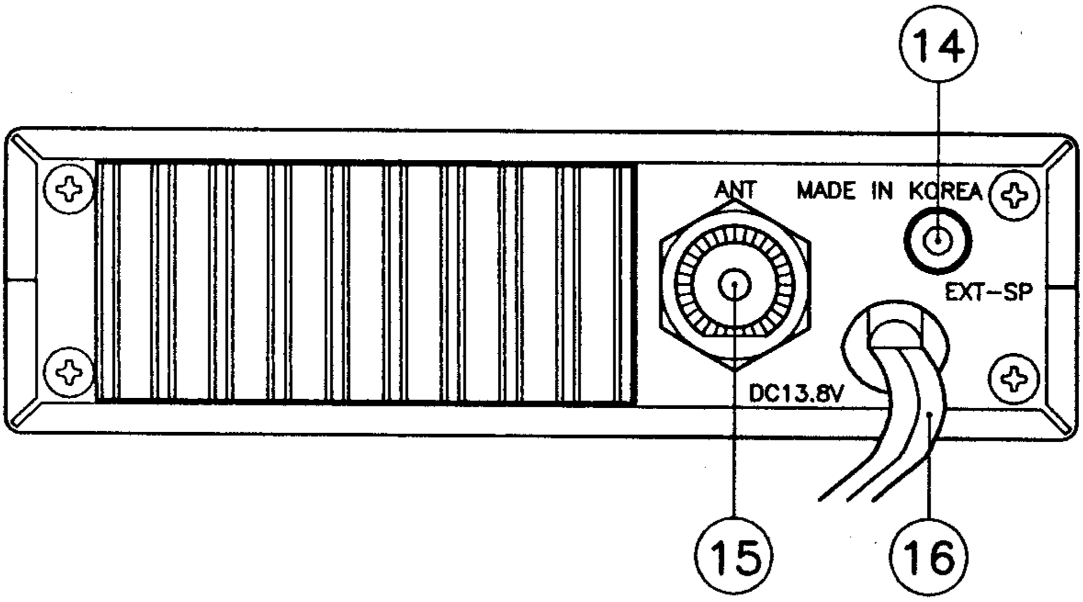
Caution: Do not connect the black wire to a non-metallic (plastic) part, or to any part insulated from the vehicle's chassis by a non-metallic part.

OPERATING CONTROL AND FEATURES



1. **MR/MS SWITCH (MEMORY RECALL/ MEMORY SAVE SWITCH)**
   Press to select memory recall and memory save.
2. **MON SWITCH (MONITOR SWITCH)**
   Press to monitor the operating frequency even when noise squelch is on.
   BUSY appears on the display while monitor switch is depressed.
3. **LOCK/RPT SWITCH (LOCK/REPEATER SWITCH)**
   All the keys except PTT (push to talk) key will be locked when LOCK key is pressed in. For unlock this key switch must be pressed once more.
   RPT switch sets the transmit frequency either higher (+) or lower (–) then the receive frequency by a fixed amount.
4. **VOL CONTROL (VOLUME CONTROL)**
   Switching power on and adjusting volume
5. **DISPLAY**
   Indicates the operating frequency and operating conditions of each function.
6. **FREQUENCY CONTROL SWITCH**
   Up and down control switch for operating frequency setting.
7. **MICROPHONE JACK**
   6 pin socket for push-to-talk microphone.
8. **SQUELCH CONTROL**
   Use to set the receiver squelch threshold level to eliminate background noise.
9. **F KEY SWITCH (FUNCTION KEY SWITCH)**
   Use in combination with dual function keys to select the alternate key function
   Also use to select 1MHz step control by frequency control switch.
10. **PRI / SCAN SWITCH (PRIORITY / SCAN SWITCH)**
    Priority function allows monitor one of the memory frequency (0~9: Dual watch channel) and the VFO frequency alternately.
    Auto scan mode in RX can be setted by this switch.

11.CALL /STEP SWITCH
Press to select CALL frequency directly.
Step switch is used to change channel space.
12.VFO SWITCH
Press to select the VFO mode..
13.T. C. SWITCH (TONE CALL SWITCH)
Press to access the repeater.



14.EXT. SPEAKER JACK (EXTERNAL SPEAKER JACK)
External speaker can be connected to this jack.
15.ANT. JACK (ANTENNA JACK)
Connect the antenna cable to this jack.
16.DC POWER CABLE
13.8 Volts DC for transceiver supplied.

FUNCTIONS AND OPERATION

BASIC FUNCTIONS

1) Direct access function

KEY	FUNCTION
LGT	Display illumination ON or OFF
UP	Frequency or memory channel, channel step up
DOWN	Frequency or momory channel, channel step down
F+up/down	MHz step change by up and down switch
PRI	Monitor the dual watch channel
VFO	Return to VFO mode
MR	Memory channel call
LOCK	Key lock except PTT and Lamp key
CALL	Call up call channel frequency
MON	Monitor the operating frequency

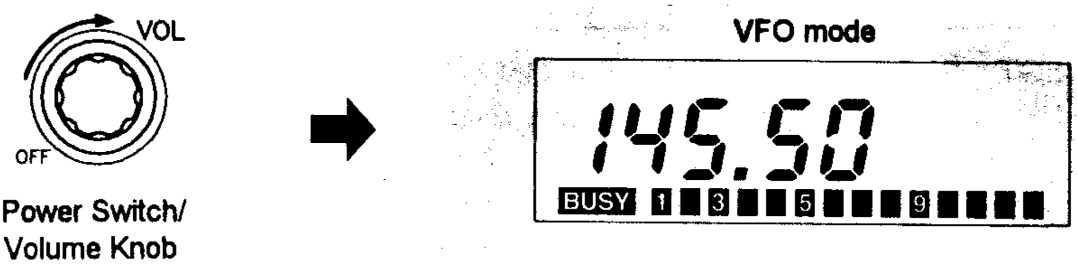
2) Acess 2nd function.

* "F+" Means one touch (momentary)

KEY	FUNCTION
F	2ND Function key : scan (memory scan)/ memory Enable,RPT / Channel step/ power Hi/ Low
F+PRI/SCAN	Channel scan
F+MR. MS	Momory enable
F+LOCK. PRT	Repeater +600KHz /-600KHz shift key
F+CALL. STEP	Channel space selector 5KHz, 10KHz, 15KHz, 20KHz, 12.5KHz, 25KHz
F+PTT	TX Power High / Low selector

3) VFO mode

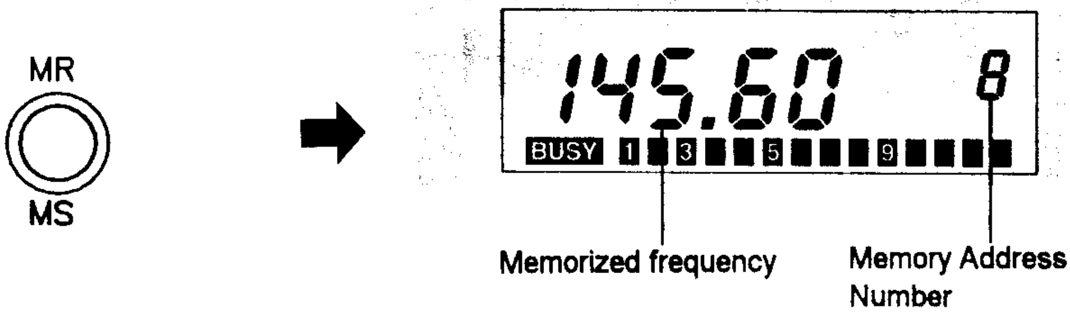
In the VFO mode the frequency setting is displayed but memory channel number, call, scan and PRI(priority) indication are not displayed.
The VFO mode is active when the unit is first turned on or VFO key is pressed.





4) Memory mode

In the memory mode the frequency setting and the memory address number are displayed.
In the VFO mode, press MR/MS key to switch to the memory mode.



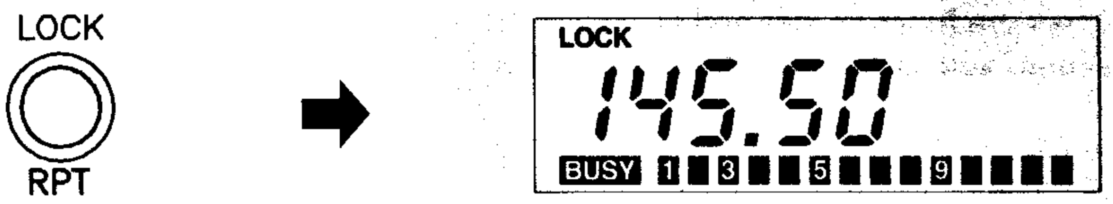
5) Call mode

In the call mode the "C" indication is displayed.



6) **LOCK**

All the key except PTT (push to talk) and night illumination key will be locked during LOCK key is pressed in.



7) **F. MHz (2ND Funtion key)**

If this key is pushed by one time, rapid frequency change by 1MHz step can be available by up and down switch, and the other keys will be operated as 2nd function.

IE : 1. Channel step. (F + Call / Step)
2. Repeater operation (F + LOCK / RPT)
3. Scan (F + PRI/SCAN)
4. Memory enable (F + MR. MS)
5. POWER Hi / Low (F + PTT)

8) **MONITOR**

Press to monitor the operating frequency even when noise squelch is on.



9) **BEEP TONE**

To set the BEEP TONE function (key switch touch tone), press the PTT switch after turn off the power switch and switch on again. To delet the BEET TONE function, repeat above procedure again.

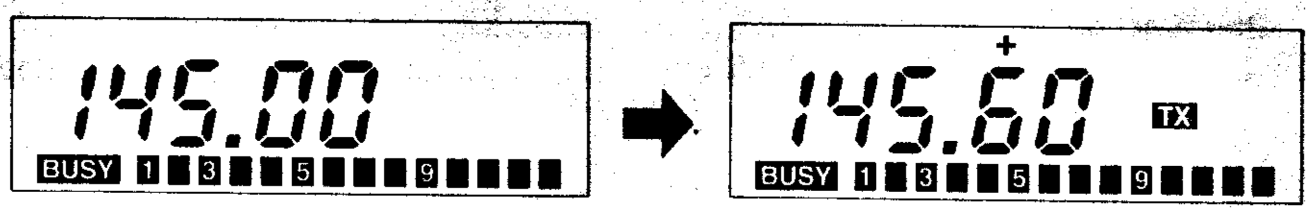
REPEATER OPERATION

Procedure

(1) Set the frequency to match that of the repeater station.

(2) Press the function key and press LOCK/RPT key.
When you press the PTT switch, the signal is transmitted at a frequency +600KHz higher than the frequency shown on the display (+600KHz off set)
To transmit with a -600KHz off set, press the function key and press the LOCK/RPT key again.

(3) While transmitting, press the tone call push switch inclued to the squelch volume to access the repeater station.
(The 1.75KHz burst signal is transmitted only while the tone call key is depressed)



CANCELLING THE REPEATER FUNCTION

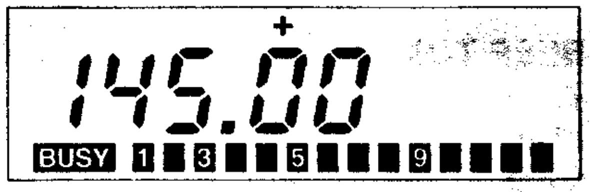
Procedure

(1) Press the function key and press the LOCK / RPT key
" + " Appears on the display, indicating +600KHz off set status.

(2) Press the function key and press the LOCK / RPT key once again.
"– " Appears on the display, indicating –600KHz off set status.

(3) Press the function key and press the LOCK / RPT key once more.
The "– " indication disappears from the display and the repeater mode is cancelled.

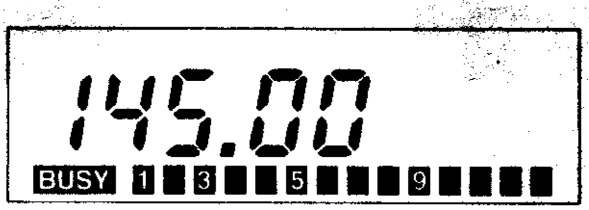
FUNC + LOCK/RPT ➡



FUNC + LOCK/RPT ➡



FUNC + LOCK/RPT ➡



MEMORY OPERATION

1) Station memory channel procedure.

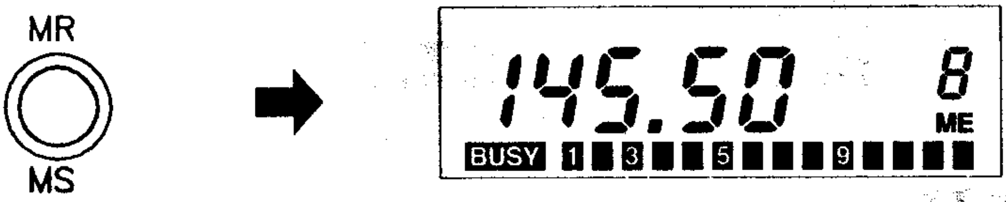
If the wanted channel frequency is a 145.10MHz, set the frequency on the display

- Press the F. MHz Key



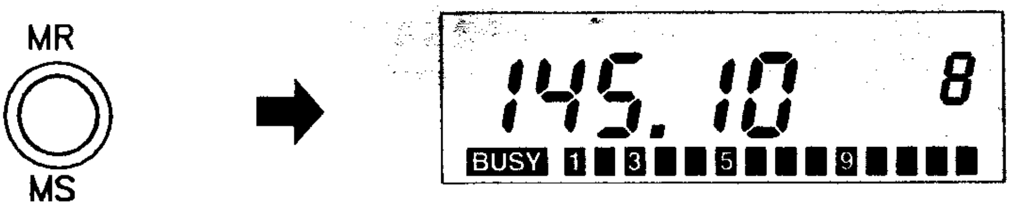
- Press the MR. MS key

In this case the memory situation is enable condition.



* **Note:** 145.50 is before used channel.

- If the memory frequency is not stored, the small one digit (8) will blink. The memory frequency is stored, the small one digit (8) is will not blinked.
- At this time press the MR. MS key one more time, the frequency (145.10MHz) is stored on memory channel number which is able to select by the up and down key switch.



- Goes to the VFO mode. repeat again above procedure, if you want to memorize the any frequency channel.
- The memory channel capacity is 0~9 (10 station memory channels)

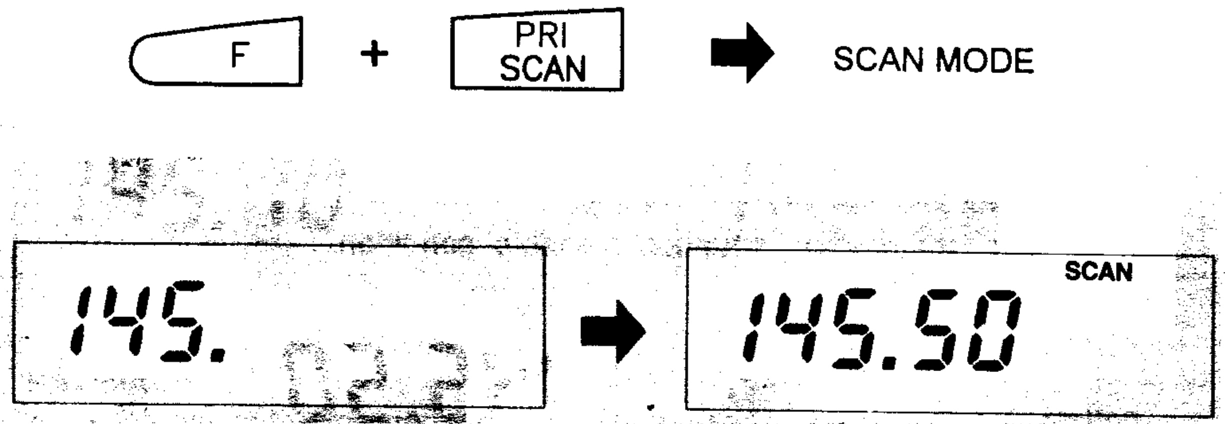
2) Call channel memory procedure

- Set the frequency to the 145.00 MHz or 145.50 MHz
- Press the F. MHz key
- Press the MR. MS key
- Next select to the " C "(Call indication) on the display by tunning up or down key switch.
- Press the MR. MS key by one time, if so,the frequency (145.00 or 145.50 MHz) will be calling channel.

SCAN OPERATION

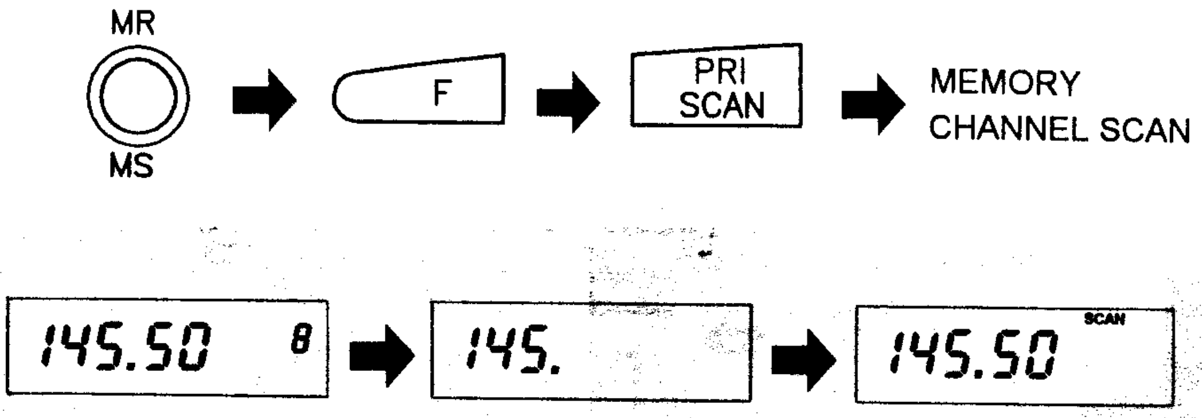
1) VFO scan

Scanning according to the channel space (5KHz, 10KHz, 12.5KHz, 15KHz, 20KHz, 25KHz) of your choice



2) Memory scan

Scanning all memory address stored in memory



During to scanning, if the receiver signal is comming to the unit, the scanning will be stopped during 5 seconds, and the scanning will be restarted.

3) Cancelling scan operation

- Press the "F. MHz " key and then press the PRI/SCAN key.
- Press the VFO key.
- Press the PTT key.

CALL OPERATION

1) 145.50 MHz Call

- The call frequency (referred to as the main channel) is set to 145.50MHz when the unit is produced in the factory.
- The call memory frequency can be changed if desired.
- Using the call key.
- Press the call / step key.

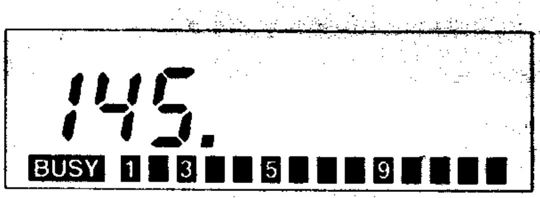


2) Changing the call frequency

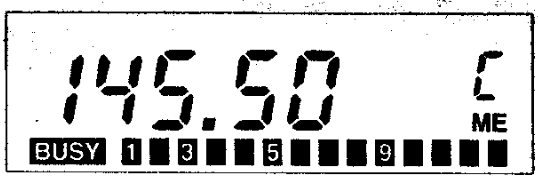
- In the VFO mode, select the frequency you wish to assign to the call key.



- Press the "F. MHz" key

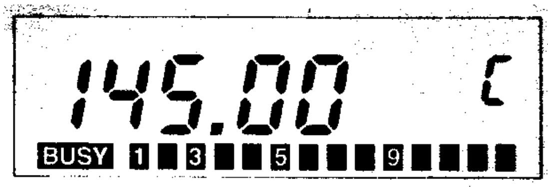


- Press the MR. **MS key**



The frequency 145.XX means before memorized channel frequency

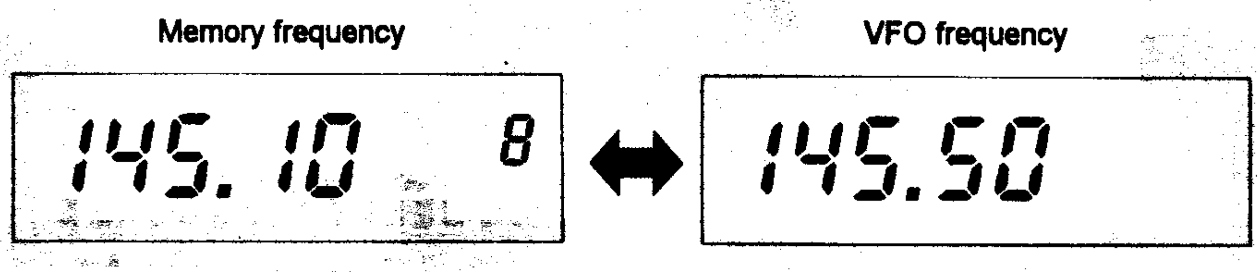
- Press the up or down switch and then will be set the memory channel number to "C, ME"
- Next, press the MR. MS key
  If so, the 145.00 MHz will be memorized in the call channel memory address "C".



PRIORITY DUAL WATCH OPERATION

1) Priority Dual watch working

This function is called PRI dual watch.
It allows you to monitor one of the memory frequency (0~9) and the VFO frequency alternately.
The following type of dual watch operation is possible.
* A memory address number of your choice and the VFO frequency.

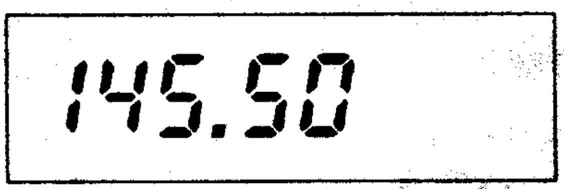


2) Procedure

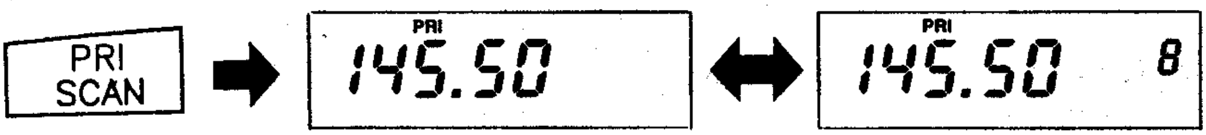
- Store one of the frequencies you wish to use for a dual watch operation in memory



- In the VFO mode, select the other frequency.



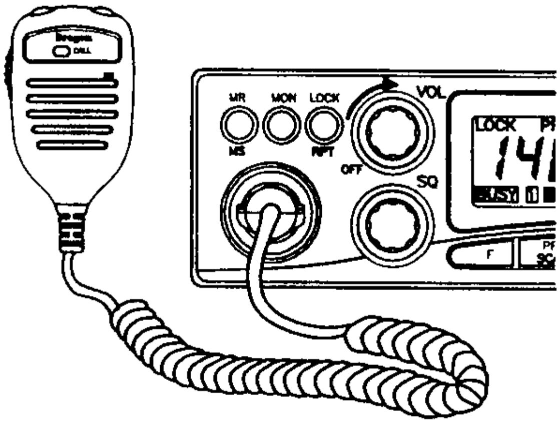
- While still in the VFO mode, press the PRI/SCAN key.
  The PRI indication appesrs on the display and dual watch operation commences using the memory frequency and VFO frequency.



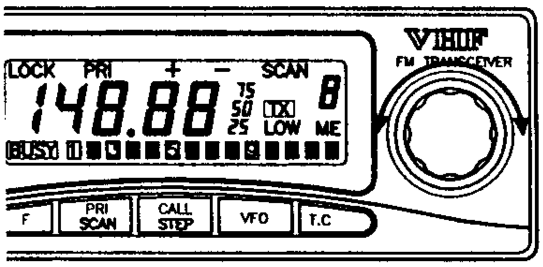
Display alternately

RECEIVING OPERATATION

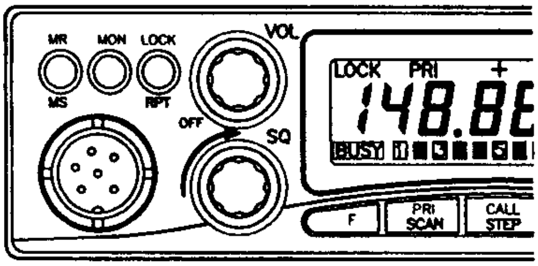
1) Turn on the transceiver by turning VOLUME clockwise. The display lights and frequency and channel appear. A bar graph also appears which shows the received signal stength.



2) Rotate CHANNEL to select a channel.



3) To cut out background noise between transmissions, wait until there is no signal, then slowly turn SQUELCH clockwise until the background noise stops.



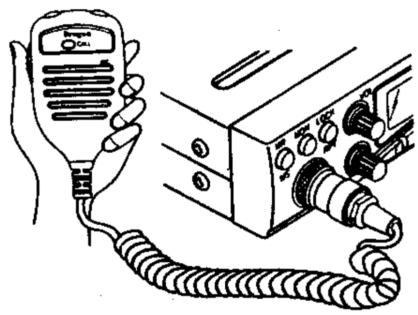
Note : To receive very weak signals, turn SQUELCH counterclockwise. You hear noise between transmissions, but you also hear weak transmissions (those not strong enough to break through a higher sguelch setting).

4) Adjuit VOLUME to a comfortable listening level.

TRANSMITTING OPERATION

Note: We recommend you try receiving before you transmit.

1) Follow steps 1-4 in "Receiving operation.
2) To transmit, press the talk button on the microphone. Hold the microphone 2-3 inches from your mouth and speak in a normal tone of voice. TX appears on the display along with a bar graph which shows the relative strength of your transmission.



3) When you finish transmitting, release the talk button. TX and the signal strength bars clear from the display.
4) To turn off the transceiver, turn VOLUME counterclockwise until you hear it click.

SPECIFICATIONS

General specifications

Frequency range..........141.00~149.995 MHz
Frequency control step..........5KHz, 10KHz, 12.5KHz, 20KHz, 25KHz
Radio wave type..........F3E (FM)
Speaker impedance..........8 ohm
Operating voltage..........13.8 volts + 10%
Memory channels..........10 Channels
Antenna impedance..........50 ohms unbalanced.
Demension..........140W x 125D x 41H

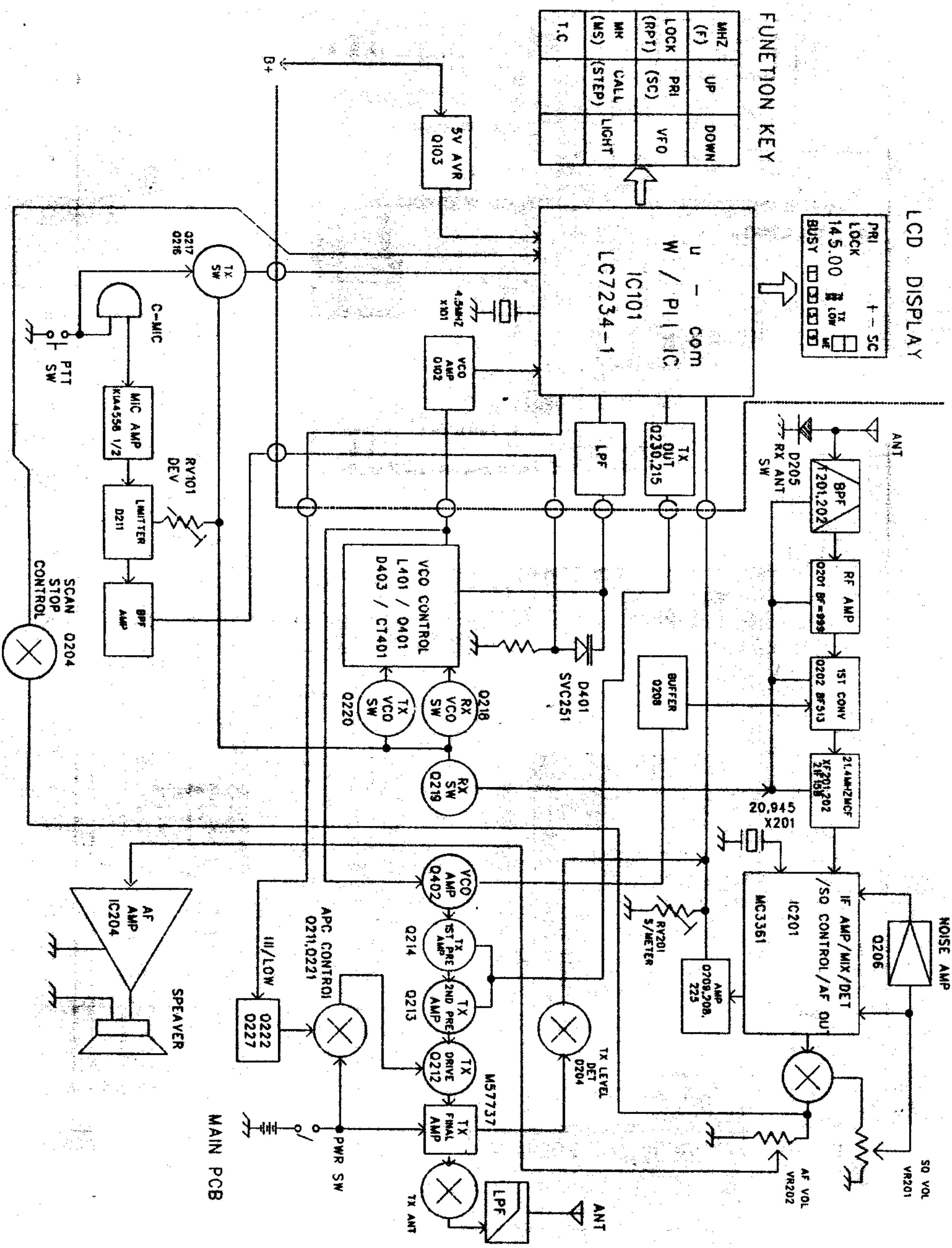
Reception

Reception type..........Double super heterodyne
Intermediate frequency 1 st..........21.40MHz
2 nd..........455KHz
Reception sensitivity..........0.22uV for 12dB SINAD
S/N Ratio for 20dB/NQ..........0.3uV
Squelch sens..........0.1uV
Squelch gap..........10dB
Audio output..........2.5W (8 ohm/10% THD)

Transmission

13.8V/DC..........25Watt
Modulation method..........Reactance MOD.
Maximum frequency dev..........± 5KHz
Maximum tone frequency dev..........± 4KHz
Spurious ratio..........60dB
Microphone..........Electret condenser type

BLOCK DIAGRAM



SCHEMATIC DIAGRAM

